

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1-11 cancelled.

12. (New) A process for the combined performance of a first physical material separation process with a chemical or biological process or with a second physical material separation process which is different from the first physical material separation process, comprising carrying out said combined process in the presence of structured multi-purpose packings having material separation elements and second functionality elements arranged in alternate layers, the material separation elements having a profiled surface, and each of the second functionally having two or more closed chambers provided on top of each other and filled with a physically, chemically, or biologically active packing material, a space being provided between any two of the chambers, which space is bridged by a section for conducting a liquid, wherein the walls of the chambers of the second functionality elements are of a polymeric material.

13. (New) The process of claim 12, wherein said first physical material separation process is a distillation, rectification, absorption, adsorption, or extraction process.

14. (New) The process of claim 12, wherein said chemical process is an alkylation, isomerization, esterification, etherification, hydration, dimerization, oligomerization or polymerization process.

15. (New) The process of claim 12, wherein the process is (a) a heterogeneous reactive rectification, (b) a reactive absorption, (c) a reactive adsorption, (d) an adsorption to biofilms, or (e) a material separation process with simultaneous biological conversion.

16. (New) The process of claim 15, wherein the process is a heterogeneous reactive rectification for the preparation of tertiary alcohols, tertiary olefins having the same number of carbon atoms being reacted with water in an acidic ion exchanger containing said structured multi-purpose packings.

17. (New) The process of claim 16, for the preparation of tertiary C₄ to C₈ alcohols by reacting the corresponding tertiary olefins with water.

18. (New) The process of claim 17, for the preparation of tertiary C₅, C₆ or C₇ alcohols by reacting the corresponding tertiary C₅, C₆ or C₇ olefins with water.

19. (New) The process of claim 18, for the preparation of tertiary amyl alcohol by reacting isoamylene with water.

20. (New) The process of claim 12, wherein the polymeric material is selected from the group consisting of polyamides, polyolefins, and halogenated polyolefins.

21. (New) The process of claim 20, wherein the polymeric material is selected from the group consisting of nylon, polyethylene, polypropylene, polytetrafluoroethylene, and polyvinyl chloride.

22. (New) The process of any one of claims 12, 20, or 21, wherein the polymeric material of the walls of the chambers of said second functionality elements is in the form of a woven, knitted, braided, or open-meshed fabric.

23. (New) The process of claim 12, wherein said physically, chemically or biologically active packing material for the chambers of the second functionality elements is in a solid or liquid form.

24. (New) The process of claim 12, wherein said packing material for the chambers of the second functionality elements comprises ion exchangers, active charcoal, support materials with biofilms or extractants.